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ABSTRACT

The limitations and unique contributions of experiential learning across the learning-to-teach continuum (pretraining phase, preservice phase, inservice phase/on-the-job learning) were examined. Three vignettes are presented that describe specific examples of firsthand experience: student teaching, exploratory field experiences, and the field as a laboratory for courses in educational foundations and methods of teaching. The vignette analysis is guided by three questions: (1) What is the preservice teacher learning in the here and now of each experience? (2) How do these lessons of experience relate to the central purpose of teaching, that is, helping pupils to learn things? and (3) To what extent do these lessons foster the capacity to learn from future experience? The analysis draws on studies of the social psychology of judgment, reinforcement theory, and research on teaching and teacher education. It identifies three pitfalls that arrest thought or mislead prospective teachers into believing that central aspects of teaching have been mastered and understood (the familiarity pitfall, the two-worlds pitfall, and the cross-purposes pitfall), and concludes with a discussion of how these pitfalls of experience in teacher preparation can be overcome. (Author/JD)

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PITFALLS OF EXPERIENCE IN TEACHER PREPARATION

Sharon Feiman-Nemser and Margret Buchmann

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Abstract

This paper on the role of experience in learning to teach at the preservice level is the first in a series of papers that will look at the limitations and unique contributions of experiential learning across the learning-to-teach continuum (pretraining phase, preservice phase, inservice phase/on-the-job learning). To provide a concrete frame of reference for the preservice analysis, researchers created three vignettes (based on observations and interviews) that describe specific examples of firsthand experience: student teaching, exploratory field experiences, and the field as a laboratory for courses in educational foundations and methods of teaching. The vignette analysis is guided by three questions: (1) What is the preservice teacher learning in the here and now of each experience? (2) How do these lessons of experience relate to the central purpose of teaching, that is, helping pupils learn things? and (3) To what extent do these lessons foster the capacity to learn from future experience? The analysis draws on studies of the social psychology of judgment, reinforcement theory, and research on teaching and teacher education. It identifies three pitfalls that arrest thought or mislead prospective teachers into believing that central aspects of teaching have been mastered and understood (the familiarity pitfall, the two-worlds pitfall, and the cross-purposes pitfall), and concludes with a discussion of how these pitfalls of experience in teacher preparation can be overcome.

PITFALLS OF EXPERIENCE IN TEACHER PREPARATION[1]

Sharon Feiman-Nemser
and
Margret Buchmann[2]

There is a common belief in the educative value of firsthand experience. We say things like "that was a real learning experience," "practice makes perfect," "experience is the best teacher," and "let experience be your guide." Common sense casts experience as both the means and the content of important learnings.

This implicit trust in firsthand experience is particularly evident in discussions about learning to teach. Teachers claim that most of what they know about teaching came from firsthand experience. In short, they learned to teach by teaching. When teachers look back on their formal preparation, they generally cite student teaching as its most valuable part. In deference to this belief, preservice teacher education gives more and more time to classroom experiences, while inservice programs stress teachers sharing their experiences with one another.

But is experience as good a teacher of teachers as most people are inclined to think? To answer this question, one must take into account commonly-used informal strategies of inference and judgment, the immediate

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[1]An earlier version of this paper was presented at the Bat Sheva Seminar on Preservice and Inservice Education of Science Teachers, Hebrew University, Jerusalem, Israel, January 1983. The authors would like to acknowledge and thank Robert E. Floden, Miriam Ben Perez, and Jere E. Brophy for their comments.

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impact of personal memories and classroom realities, the instructional purposes of teacher educators, and the normative context of schools as institutions.

This paper focuses on the contribution of firsthand experience at the preservice level of learning to teach. The discussion rests on a broad view of learning to teach as a process that begins before formal teacher preparation and continues afterwards. This means that preservice field experiences are part of a continuum that includes powerful early experiences with parents and teachers as well as the learning that inevitably occurs on the job. Thus learning from firsthand experience in preservice education is influenced by past experiences of teachers and teaching which shape subsequent learning from teaching.

To set a concrete frame of reference for our discussion, we begin with three vignettes that describe specific occasions for firsthand experience at the preservice level and in elementary schools. More and more, preservice programs are providing exploratory field experiences so that future teachers can encounter the realities of classroom life early in their formal preparation. The first vignette describes such an opportunity. The second vignette illustrates another trend--linking field experiences with foundations courses. The third vignette is about student teaching, the most familiar way of giving preservice teachers firsthand experiences of schools and classrooms. While the three students that figure in these occasions are imaginary, the vignettes are based on observations and interviews.

Each vignette is followed by a commentary in which we explore what the imaginary student is learning from the experience. The commentary is guided by three questions. First, what is the preservice teacher learning in the here and now? We look at potential learnings--insights, messages, inferences,

reinforced beliefs--about being a teacher, about pupils, classrooms, and the activities of teaching. We are interested in a particular type of inappropriate learning, which we call "pitfalls." Second, how do these lessons of experience relate to the central purpose of teaching, that is, helping pupils learn things? Third, to what extent do these lessons foster the capacity to learn from future experience?

The conceptual and behavioral traps which we call "pitfalls" are present in all three vignettes. The discussion highlights each of them in turn. It is based on studies of the social psychology of judgment, reinforcement theory, research on teaching and teacher education, and the educated imagination of a teacher educator with a philosophical bent and a philosopher interested in teacher education.[3]

The scenes that follow deal with learning from experience in the preservice phase of learning to teach. The expectation that something will be learned in these different occasions is probably justified. Yet not all learning is productive or desirable. Thus the question of whether we want future teachers to learn all the lessons of experience must be examined.

Vignette 1: Early Field Experiences

Every Thursday at 8:15 a.m., Karen catches the bus to Central School, where she spends the day in the fourth grade. Even though Karen is only a sophomore, she has always wanted to be a teacher because she loves children. She is excited about being a teacher's aide this term. This is the first time Karen has been inside an elementary school since she was a pupil, and she is

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[3]The inferences and generalizations in our discussion are based on the following: Buchmann & Schwille, in press; Anderson, 1981; Becker, 1972; Dewey, 1904/1965; Feiman-Nemser, 1983; Little, 1982; Nisbett & Ross, 1980; Platt, 1973; Sarason, 1982; Tabachnick, Popkewitz, & Zeichner, 1980; Wilson, 1975; and Zeichner, 1980.

surprised at how modern the building is and how knowledgeable the fourth graders seem. She had wanted the children to call her Karen, but the teacher introduced her as Miss Miller, which feels a little strange.

In the morning Karen works with Tommy on his spelling list. While the teacher runs a reading group, she helps individual pupils with their seatwork. At recess, Karen goes outside with the children and usually ends up playing with the same three girls. At lunchtime she swaps experiences with other university students enrolled in the same introductory education course. During the silent reading period after lunch, Karen talks a little with the teacher and then marks papers. She can see that some pupils understand their work better than others. The teacher has asked Karen to do a bulletin board on careers and to take the class to the library. Karen really feels like a teacher walking the class to and from the library.

Commentary

In trying to make sense of her first field experience, Karen naturally thinks about how this setting resembles the ones she remembers from her own schooling. Her judgment about the pupils implies a comparison with the past and thoughts about the future. Not only does she feel that they know more than she did at their age, she also feels apprehensive about whether she will know enough to teach these children. Yet much of what she sees is familiar. Past experience helps in making sense of spelling lists and reading groups, recess and bulletin boards, seatwork and ditto sheets. Actually, her familiarity with these classroom practices gives her a feeling of competence. Classroom life is not all that strange to Karen, even seen from the other side of the desk. Many things are fixed in the school day, and classroom activities have inherent and predictable patterns. Caught up in memories that help

her understand much of what is happening around her, Karen identifies teaching with things she already knows. Still, there is a lot to learn, but Karen is unsure about how to define it and how to go about learning it.

The fact that she prefers to be called Karen and plays with the same three children at recess suggests that she feels more like a pupil than a teacher. Yet getting the class to and from the library without mishap gives her a sense of what it will feel like to be in charge and have students do what she wants. A sense of power gets added to some sense of competence; acting like a teacher, Karen sees pupils acting in their matching roles. "Should the teacher be an authority or a friend," Karen wonders. How she resolves this issue will depend on what is modeled in the classroom and on the expectations she holds and encounters at the university and in the schools.

Similarly, what Karen makes of her observation that the children differ in their understanding will depend on how the teacher handles errors and misunderstandings and whether teacher educators explain the pedagogical significance of errors. The observation she makes about the children's written work relates to the heart of teaching: helping students learn things and looking for what they have learned. Will this observation be turned into questions which Karen actively tries to answer in further field experiences and in her professional coursework? It probably will be if Karen has the inclination and capacity to connect classroom experience with formal knowledge and to learn from further experience by thinking about it. These capacities are central to teaching, but they must be learned. Most teachers do not bring an inquiring disposition to their preparation, and immersion in the classroom tends to preclude inquiry. Since it is unlikely that the habit of inquiry will be acquired on the job, it is important to cultivate it at the preservice level and reinforce its role in teaching.

In early field experience, unquestioned familiarity is a pitfall because it arrests thought and may mislead it. People generally do not recognize that their experience is limited and biased, and future teachers are no exception. The "familiarity pitfall" stems from the tendency to trust what is most memorable in personal experience. Karen approaches her early field experience with preconceptions about what classrooms are like and what teachers do. She has a selective interest, and her perceptions are personal and affectively charged. Ideas and images of classrooms and teachers laid down through many years as a pupil provide a framework for viewing and standards for judging what she sees now. Such frameworks will fit with social traditions of teaching and schooling; they have the self-evidence and solidity of the taken-for-granted.

Fundamental facts of classroom life, such as that teachers *are* in charge, may impress Karen; however, she may not relate this fact to the central tasks of teaching unless someone helps her to do so. One can learn to be in charge without learning to teach children something. Classroom experience in itself cannot be trusted to deliver lessons that shape dispositions to inquire and to be serious about pupil learning. On the contrary, it may block the flow of speculation and reflection by which new habits of thought and action are formed.

Vignette 2: Classrooms as Labs

As a sophomore Tom had an early field experience much the same as Karen's. Now he is a junior halfway through his preservice program. This term, in conjunction with his educational psychology course, Tom spends one afternoon a week in a second-grade classroom. Because he is only there for half a day, he does not know all the pupils' names. He is not even sure that they know his name. Nor is he sure of the classroom routines. Most of the

time he observes. He is supposed to focus on three pupils whom the teacher has identified as in some way different from the others.

Tom spends 15 minutes observing each pupil. His assignment is to describe what they are doing during academic activities, to note the specifics of their behavior and the setting in which it occurs. At first Tom thought this would be easy. But it is hard to watch and write at the same time, and he is not sure about what to write down. In her feedback, the university instructor said that Tom should try to be more objective and avoid so many inferences. Instead of noting that his focal pupil is not paying attention, he should describe what he sees, that is, that D. goes to the pencil sharpener, returns to his desk, stares out the window, and so on.

Tom's difficulties stem in part from the fact that by the time he arrives, the class is already busy at work. His three focal pupils are at their desks doing assignments, and Tom has trouble figuring out what they are supposed to be doing, let alone whether they understand it. He does notice differences, though, in their ability to concentrate, tendency to move around and talk to neighbors, and accuracy of work. Tom looks forward to the time after recess. Then his assignment will get easier, because he can hear what the teacher says. Still, for the last two weeks, the class has been rehearsing for Parents' Night, which doesn't strike Tom as a very academic activity.

In his educational psychology course, the instructor said that focused observation can help you learn to think like a teacher. It gives you practice in noticing differences in children's responses to instruction and that, in turn, can help you decide whether pupils are learning something. Tom can see that he is beginning to pay closer attention to children's behavior, but he is uncertain about the value of writing such detailed notes. Certainly when he is a teacher he won't be able to watch individual pupils for 15 minutes at a

time. He would rather work with the pupils and find out about their learning that way. Because he is in the classroom for such a short time, Tom cannot become an integral part of the action. Also, getting involved would keep him from concentrating on just those things that he needs to practice for his university class. His observation assignment is meant to set him apart from what is going on. The children rarely approach him for help and the teacher does not count on Tom's assistance. It is Tom who is the learner, and what he learns are ways of seeing, not of acting.

Commentary

Tom's learning experience is largely shaped by the instructional purposes of his course in educational psychology. He appears to be learning how to take detailed notes on individual children's responses to academic activities. Based on practice and feedback, he will become more adept at distinguishing description from judgment and at providing some context for observed behavior. Over time he should also begin to see patterns in the behavior of individual pupils and differences among them. In that sense he is developing tools to see how children respond differently to instructional activities. The question is whether Tom himself relates this growing awareness to his future work as a teacher.

Is Tom learning habitual ways of seeing or is he acquiring a skill that he is capable of applying to specific situations? In the first case, there may be some transfer once he is actually teaching. That is, Tom will continue to look for differences in student responses to instruction. In the second case, Tom will have to decide whether teaching calls for the application of observational skills. He must come to believe that this kind of observation can (indeed should) inform instructional decision making. In other words, this "academic" skill must become part of his conception of teaching.

In either case a lot depends on what happens with his observations, both in the classroom and in his foundations class. Building habitual ways of seeing requires instruction and reinforcement. Tom will need help in thinking about what these observations mean and what they imply for action. He can get that help from two sources--the classroom teacher and his university professor. Suppose the teacher shows Tom that she, too, is a classroom observer, even though she does not have the luxury of observing in the way Tom does. Suppose she talks with him about what his data may mean, encourages him to observe the same children in nonacademic activities to round out his impressions of them, tells him when she can afford to observe, and explains how observation helps her to decide what to do. Suppose on the other hand, that the teacher lets Tom go about his business without paying much attention to him, seems to ignore or miss the kinds of observational cues he is picking up, and treats the business of lengthy note taking as somehow relevant. Clearly these two alternatives would communicate quite different messages about the role of observation in teaching and learning to teach. Note that the second alternative is liable to reinforce any beliefs about the irrelevance of academic learning for teaching that Tom might already hold.

Chance also plays a role. The cooperating teacher's conception of her work may include observation. Ordinarily, she makes time to act on this conception. This class of second graders, however, happens to be all over the place--literally, and in terms of what they need to learn. The teacher is busy keeping order while doing her best to diversify pupil work. She cannot give the pupils all the feedback she wants, let alone spend time with Tom.

Classrooms are busy places, and Tom sees that the teacher must attend to many things. The observational skills that he is developing are related to helping children learn. Without training in how to look and what to notice,

it is easy to miss important clues about pupil responses to instructional activities. Tom can afford to concentrate on mastering this way of looking precisely because he is not responsible for what goes on. But there is a pitfall. If Tom does well in this assignment, he will have the gratification of a good grade. But this immediate reward is indigenous to the university culture, not to the culture of schools and teaching. The very structure of Tom's assignment shows that university learning and classroom teaching are worlds apart.

Tom's experience illustrates what we are calling the "two-worlds pitfall." In teaching, observation is a means, not an end. Ways of seeing do not imply ways of acting. Tom may succeed in becoming a skilled observer, but this will not guarantee that he will know how to act wisely on what he notices. Nor will further classroom experience in itself activate the acquired skills in situations that call for observation. Tom will need help to see how what he has learned as a university student can shape his thought and action as a teacher. His university instructor may tell him that learning to look is important in learning to teach. Will Tom come to see observation as a valuable tool for the work of teaching, or as something he must do, this term, for a course requirement?

The "two-worlds pitfall" has at least two aspects. The norms and rewards associated with Tom's formal professional preparation fit with the academic setting. Doing well at the university brings immediate and highly salient rewards which may not have much to do with success in teaching. On the other hand, the pressure to adapt to the way things are in schools is great. Moreover, this pressure will resonate with commonsense notions of teachers and classrooms acquired through the personal experience of schooling. Confronted with such pressure, academic learning is liable to evaporate, regardless of

its worth. Its availability in memory depends on attributions of relevance and connections to particular instances that have personal meaning and felt significance. Its availability in action depends on know-how in adapting the learning to concrete situations.

Vignette 3: Practicing Teaching

It is spring. Sue has just begun her third week of student teaching in a fourth-grade classroom. Today, she is supposed to take over the morning activities. Since Sue has been watching the teacher for the past two weeks, she has a good idea about what the morning is like, and that makes her feel fairly comfortable. In addition, the teacher explained what lessons she should cover and gave Sue the teacher's guides to follow. This morning Sue is planning to play Simon Says after the reading lesson. She puts the math assignment on the board just like the teacher does and calls the first reading group to the front of the room. She calls on children in turn to read the story and then asks the questions spelled out in the guide. Everything goes smoothly and Sue thinks with some elation that she can actually teach.

Next week Sue will take over for the entire day, which means that she will also teach spelling, science, and social studies. She plans to have a spelling bee for Friday. This will generate a lot of noisy excitement, since the pupils enjoy competing with each other. In science she will teach a unit on batteries and bulbs that the science methods teacher showed her; she wonders how the children will like discovering things on their own. So far she has not seen any science instruction in this classroom, but her cooperating teacher said she could try out this unit. Some movies have already been ordered for social studies, so the day will be pretty well filled. Sue hopes that she can keep the pupils busy and that she won't have to discipline

anyone. She is eager to see if she can get through a whole day on her own. The outcome will mean a lot to her. Sue stands at the threshold of doing the work of teaching in earnest. Whatever will help her to come out of this experience in one piece will impress her as tried and trustworthy.

Commentary

So what does it prove if Sue can make it on her own in student teaching? In the first place, it shows that she can keep the system running, which is how Sue basically sees her task. She is confident because she knows what happens in the morning. She believes that she can step into the teacher's shoes and do what her cooperating teacher does. Moving children through the daily schedule is, of course, part of the teacher's responsibility, but a real teacher also has to decide what that schedule will be, how the children should be grouped, and what assignments to put on the board. The point is that student teaching occurs in somebody else's classroom; this makes the requirements for action in student teaching fundamentally different from those that fall on the teacher.

Making it on one's own in student teaching is not the same as learning to teach. Sue's confidence is not well-founded; she does not see clearly that the givens around her were shaped and established over time and that, for the real teacher, there is a good deal of uncertainty to contend with. Classroom structure has to be created, and it can take different forms. Sue's personal experiences as a pupil and her experiences in the field do not provide a reliable sample of the variation in classroom environments. What can be experienced firsthand is necessarily limited and likely to be biased. Just because experiences seem plausible does not mean they are trustworthy. Sue's belief that she knows how classrooms work will be difficult to dispel since it grows out of things she has seen and particiapted in; these experiences are vivid

and cathected. Yet inferences and generalizations based on firsthand experience are frequently unwarranted or at least premature.

One can see why Sue thinks she is learning to teach. She rehearses behaviors that she identifies with teaching and that mostly are familiar to the class. She and the cooperating teacher will see children at work, perhaps happily and with excitement. It is unlikely that her cooperating teacher will fail to commend her performance. Student teachers are particularly sensitive to things that bring about a feeling of success. Going through familiar routines and being praised will produce that feeling, independent of whether practices lead to student learning.

Sue's confidence is partly based on her observations in this classroom. But vivid memories of her own schooling also help her figure out what to do and how to structure the time and activities. This applies, for instance, to the spelling bee. Teachers often use competition as an incentive to get children through boring tasks. Unless Sue is helped to see the possible long-term consequences of such instructional strategies--shaping pupil conceptions of the purposes of classroom life in terms of rewards extrinsic to learning, for example--she may continue to think of a spelling bee simply as a "fun thing to do." If no one requires Sue to practice making and justifying instructional decisions or to consider the consequences of given actions in a specific practical context, she may get confirmed in a view of teaching as filling time, keeping children busy, perpetuating familiar practices without considering their consequences for pupil learning, in the short *and* long run. Classroom experience alone, whether past or present, cannot justify what teachers do, nor teach teachers to think about their work.

Sue has the impression, common to many teacher candidates, that student teaching is the time to put it all together, the definitive test of the

relevance and practicality of formal prepa ation. In this context, it would be important to know what motivated Sue to try out the elementary science unit on batteries and bulbs. Was Sue's decision impelled by an interest in science and a belief that children should understand how their everyday world works? Or was i' motivated by a desire to try out something new and neat (being "creative" is a characteristic of student teachers that teachers and teacher educators often judge favorably). The problem is that the discovery approach to science teaching rests on a view of knowledge that presupposes a deep understanding of subject matter and children's learning. Sue has never seen the teacher in this classroom teach science. Has Sue seen any demonstration of "open" pedagogy in science? Without understanding the value and limits of "messing about," she will have no basis for deciding when and how to intervene in order to nudge children's learning along.

What will the experience be like and what will Sue learn from it? Various scenarios are possible. The children could cooperate in this new kind of learning because the activities are fun, and the teacher could compliment Sue on her creativity. On the other hand, Sue could be unable to manage "hands-on" discovery learning, and the teacher could be displeased with the commotion and the amount of time being taken. While it is not clear whether *either* scenario would promote science learning in the pupils, *both* have potential for teaching Sue some things about teaching--if she is helped to articulate the lessons of this experience. Just as the pupils must make sense of their experiments with batteries and bulbs, so Sue must think about what happens in relation to pupil learning. In the first case, this means looking for evidence of student learning. In the second, it means figuring out what went wrong and what to do about it without rejecting the whole approach forever. (While it may be too complicated now, discovery learning is worth another try.

Before one can assess what Sue has learned from her student teaching experience as a whole, one needs to know about the teacher's intentions as well as those of the university staff. Perhaps the teacher has judged that Sue needs a lot of guidance as she takes over a block of time. Or it may be that the teacher is not much inclined to have her classroom schedule altered, especially at this time of year. Has Sue been encouraged by the university staff to fit herself into the teacher's overall plan and propose mostly activities that do not alter what is going on in this classroom? The university staff realizes that teachers need to keep their classrooms running and appreciates how easily even routines that have been established over time and with care can be upset.

This analysis illustrates the "cross-purposes" pitfall. The legitimate purposes of teachers center on their classrooms; classrooms are not designed as laboratories and do not operate to further the purposes of learning to teach. Almost necessarily, the teacher will see the teacher education student's attention to the way things are as praiseworthy. It is functional from the point of view of classroom life. Yet, without instructional intervention, Sue's adaptiveness to the here and now may be dysfunctional for the long-range purposes of learning to teach. Learning from further experience presupposes acting with understanding. Attending to the immediate requirements for action in established settings does not foster the capacity to learn from further experience. Nor is one's success at this task a reliable predictor of success at running one's own classroom for the purposes of pupil learning.

Conclusion

The three vignettes illustrate three pitfalls that must be overcome if preservice field experience in classrooms is to serve the broad purposes of learning to teach. At best, field experience in teacher preparation means

learning things that are only part of the job of teaching. Once they begin teaching, Tom, Karen and Sue will quickly see that they do not know all there is to know about teaching. The more serious problem is getting into pitfalls or learning things that are inappropriate in any teaching situation and that will be reinforced on the job. The "familiarity pitfall" arises from the fact that prospective teachers are no strangers to classrooms. The "two-worlds pitfall" arises from the fact that teacher education goes on in two distinct settings and from the fallacious assumption that making connections between these two worlds is straightforward and can be left to the novice. The third pitfall arises from the fact that classrooms are not set up for teaching teachers: It's a case of being at cross purposes.

These pitfalls arrest thought or mislead prospective teachers into believing that central aspects of teaching have been mastered and understood. Premature closure comes from faulty perceptions and judgments that are supported, even rewarded, by trusted persons and a salient setting. For Tom, this setting is probably the university classroom; for Karen and Sue, the elementary classroom. What makes these perceptions pitfalls is that future teachers get into them without knowing it and have a hard time getting out. What makes them even more treacherous is that they may not look like pitfalls to an insider, but rather like a normal place to be. Clearly, help from the outside is necessary on both counts.

Overcoming the Pitfalls

The familiar is the most salient and the least amenable to inquiry. Overcoming the "familiarity pitfall" requires a break with the taken for granted and a recognition that the familiar and the real rest on social and mental constructions. Future teachers cannot be expected to recognize that

what they know about classroom life is only part of a universe of possibilities. They need help in seeing how their personal history and experience of schooling influence their perceptions of classrooms in a way that makes it difficult to appreciate alternatives. Both ends and means must be considered. A larger and more flexible vision need not result in a rejection of traditional or familiar ideas and practices. There is, however, a big difference between mere habit and customary action that is understood and seen in perspective. Furthermore, plain thinking and empirical research do sometimes show that traditional ways of doing things are not always sound or effective. Overcoming the familiarity pitfall should keep future teachers from confusing what is with what can or should be, and heighten their receptivity to new data.

Overcoming the "two-worlds pitfall" requires acknowledging that the world of thought and the world of action are legitimately different. Each has its unifying purposes and a potential for making a contribution to learning to teach. In other words, one does not overcome the "two-worlds pitfall" by eliminating it. The goal of professional education is acting with understanding. Neither understanding nor action by itself will suffice, and belief alone does not produce action. Teacher education students need help in seeing how understanding can clarify and shape ways of doing. They also need instruction in judging ways of doing and in adapting them to particular settings as well as to their own capacities. Teacher education students cannot be expected to make the crucial distinction between enlightenment and application in considering the uses of knowledge in teaching. This is where teacher educators must take responsibility for their students' learning.

Finally, there are two ways to overcome the "cross-purposes pitfall." One is to identify learning to teach with adaptation to whatever classroom and school setting the student teacher is placed in. The more desirable alternative is to work toward a closer fit between the purposes of classroom life and those of learning to teach. This would require structural and normative changes in schools, changes that would enable teachers to study their practice together and get rewards for doing so. If schools became places where teachers as well as pupils learned, then future teachers would learn to teach in classrooms where their cooperating teachers were also students of teaching.

In such a setting, chance and the press for action would not decide what student teachers learn. The give and take of conversation among persons at different places in learning to teach would expand the universe of concrete alternatives and overcome the limits and biases of personal experience. Thus, future teachers would get the message that learning to teach is a lengthy, ongoing process that other people care about, a process in which one's own experiences provide only some of the data.

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